HCA-58/20(30)

SOLAR COLLECTOR INSTALLATION MANUAL

1. CAUTIONS

1.1 Gloves and Eye protection must be used when handling glass tubes. Avoid scratching or any sudden shock to tubes；

1.2 Under no circumstances are the tubes to be left exposed to the sun over a long period without heat extraction from the system；

1.3 Unpack and install tubes after the manifold unit has been installation and all pipe work has been completed and the system is filled.（Avoid high temperature of empty manifold to affect system efficiency）；

1.4 During installation of the tubes, the pump should be switched on;

1.5 If the system no work long time, it's better to shadow the solar collector；

1.6 Don't installation by hang to avoid drop and hurt human;

1.7 Install the solar collector with **22° ～50^0** angle.

1.8 In hot water applications, a heat exchanger should be used between the collector and the hot water storage tank to ensure a long and trouble free service life (calcium deposition).

1.9 When heating a swimming pool or spa, a heat exchanger should be used between the pool and the collector.

1.10 Hejiasun manifold system are designed to operate at a maximum pressure of 6 Bar(90psi). It's strongly recommended to use a suitable pressure relief valve.

1.11 To extend the service life of your system, the vacuum tubes shall not be installed until the system is fully connected and ready for use.

2. SOLAR COLLECTOR TUBE

2.1 Components

1：Heat Pipe

Transfer the thermal energy from the bottom to the condenser efficiently and rapidly；

2：Glass tube top holder

The Part to hold the glass tubes on the manifold box；

3：Cover

Fix up heat pipe and protect the thermal energy lost from the glass tube；

4：Conductive Aluminum fins

Transfer the thermal energy from the glass inner wall to the heat pipe rapidly;

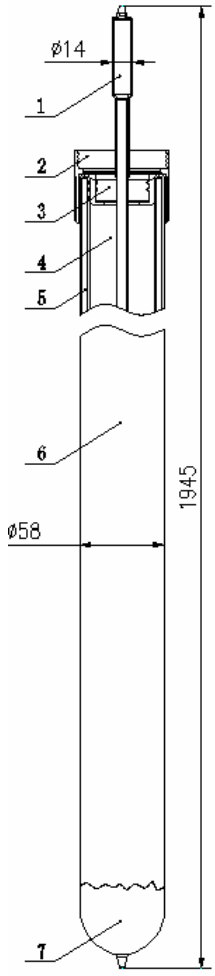
5：Vacuum layer

6：Solar glass tube

High efficiency solar glass tube with maximum radiation absorption, minimum thermal radiation losses and high insulation performance；

7：Getter

This part seam like Mirror color which means the vacuum layer keeps well.

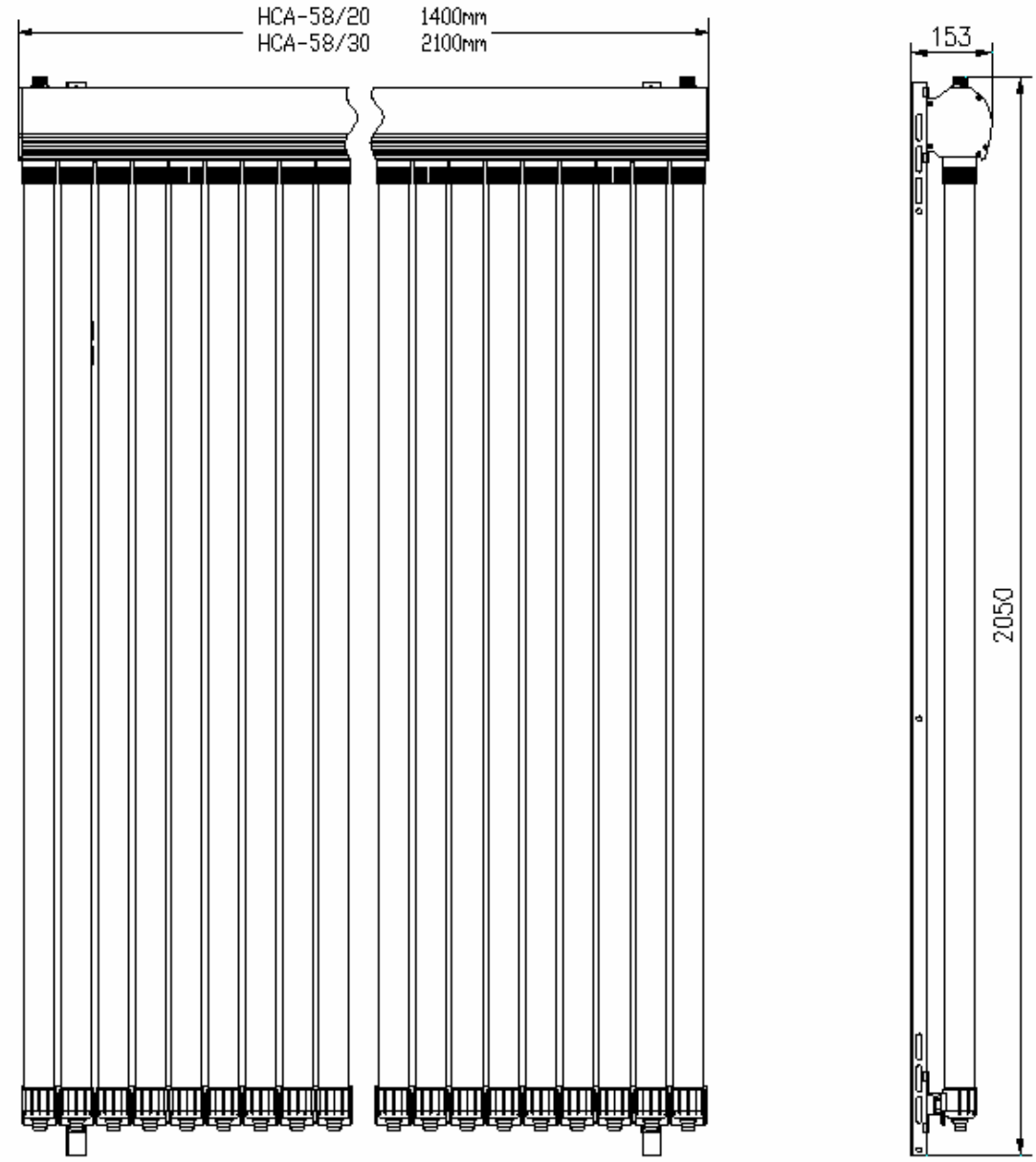


2.2 Parameters

SOLAR COLLECTOR TUBE PARAMETERS						
Absorptivity	Emissivity	Glass transmission	Vacuum	Tiptop temp.	Low temp. durability	Wind durability
≥92%	≤10%	≥92%	≤5×10^{-2}Pa	250℃	—35℃	30m/s

Absorbing coating: Al-N/AL., Copper, Stainless steel as coating materials with high-temperature resistance and long life.

3. SOLAR COLLECTOR



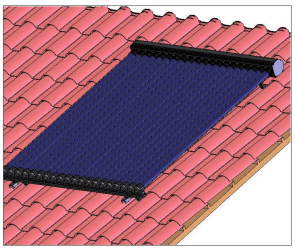
Model	HCA-58/20	HCA-58/30
Number of Tubes	20	30
Dimensions（L×W×H）	2050×1400×153	2050×2100×153
Effectual Absorb Area	1.62m^2	2.42m^2
Weight（Empty）	63kgs	94kgs
Monifold's Capacity	1.15L	1.7L
Connections	G3/4" male thread	G3/4"male thread

4. INSTALLATION

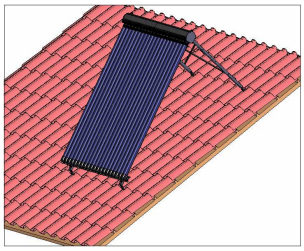
Select a suitable position for the collector. It should be face most to the sun without any shadow around. Recommended angle of tilt is the same as your geographical latitude. The roof should be strong enough to hold the collect weight.
Tighten all of bolts to ensure that bottom track and manifold are in line.

Installation way：Sloping roof installation as figure A－1、A－2；
Sloping roof installation: B；
Flat roof installation: C

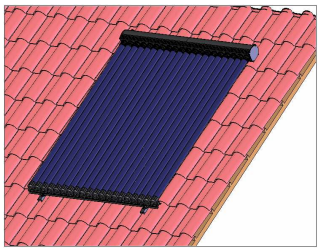
A－1



A－2



B



C

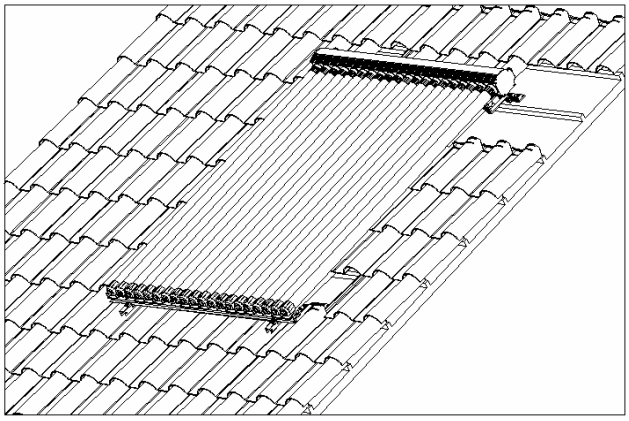
4.1 SLOPING ROOF INSTALLATION

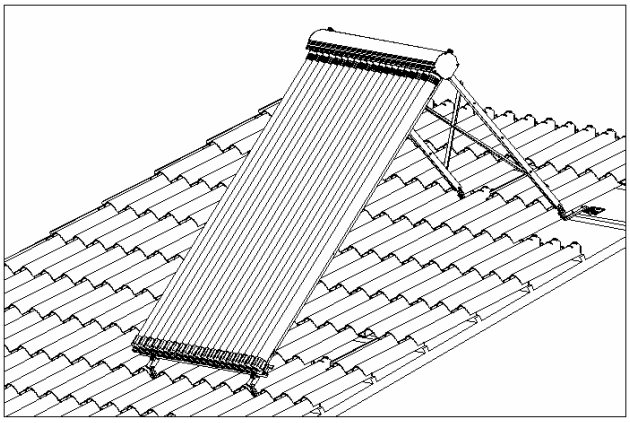
Select a suitable installation way according to roof angle, local latitude and tile shape.

4.1.1 Sloping roof installation A

Tow installation ways as Figure A-1 and A-2：

A－1： A－2：

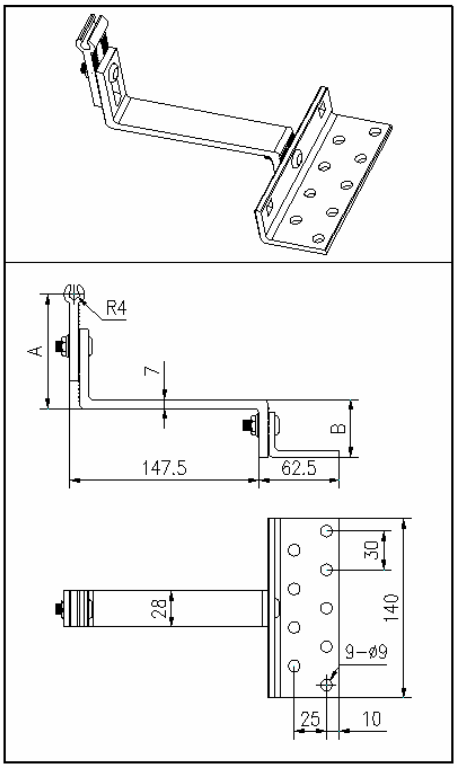




Installation Steps：

4.1.1.1. Select the brackets as right figure
Adjust size of “A”、“B” according to tile shape；

Dim.	Adjustable range (mm)
A	70～140
B	45～60



4.1.1.2.Find distance between brackets：

The diagram below shows two manifolds and is drawn for “A” brackets, although the “A””C” dimensions will be the same for the Flat Roof installation.
From the table below you can calculate the roof brackets layout for different manifold sizes.

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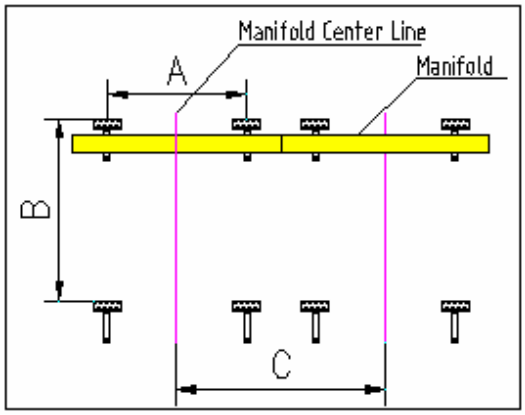

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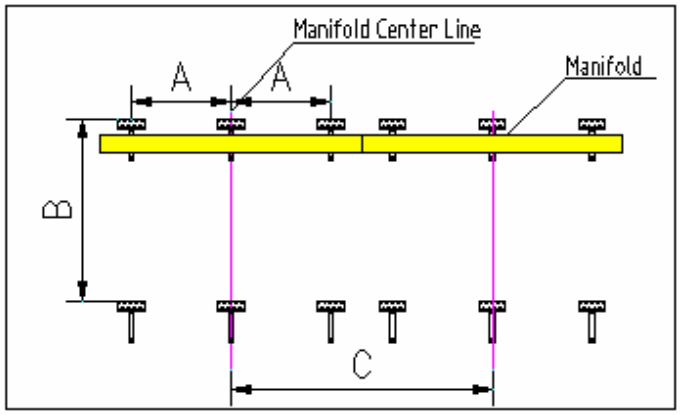
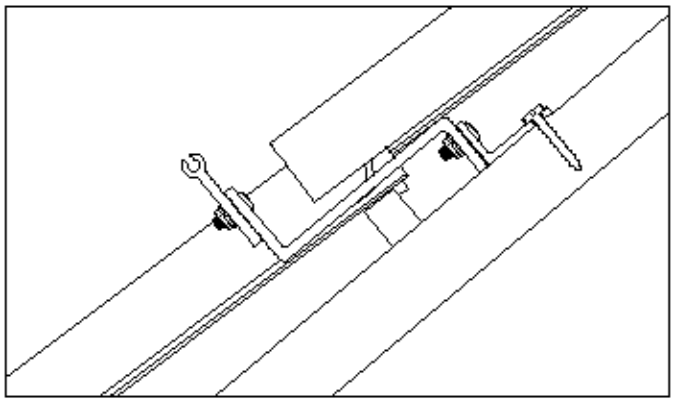


Dim.	Description	HCA-58/20		HCA-58/30
A	Horizontal Bracket Spacing	1000～1300mm		800～1000mm
B	Vertical Bracket Spacing	A－1	1588～1910mm	1588～1910mm
		A－2	1700～2000mm	
C	Distance between Centres	1410mm		2110mm

*Note： Vertical Bracket space(B) is different for A-1 and A-2 installation ways.

4.1.1.3. Select suitable fixing way according to roof structure and roof material：

Wooden roof－－－Bolts suitable to fix on the wood
Concrete roof－－Expand bolts

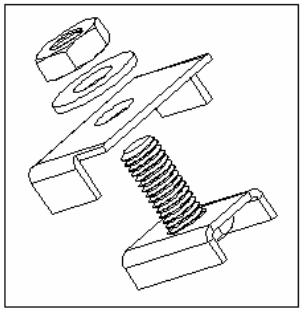


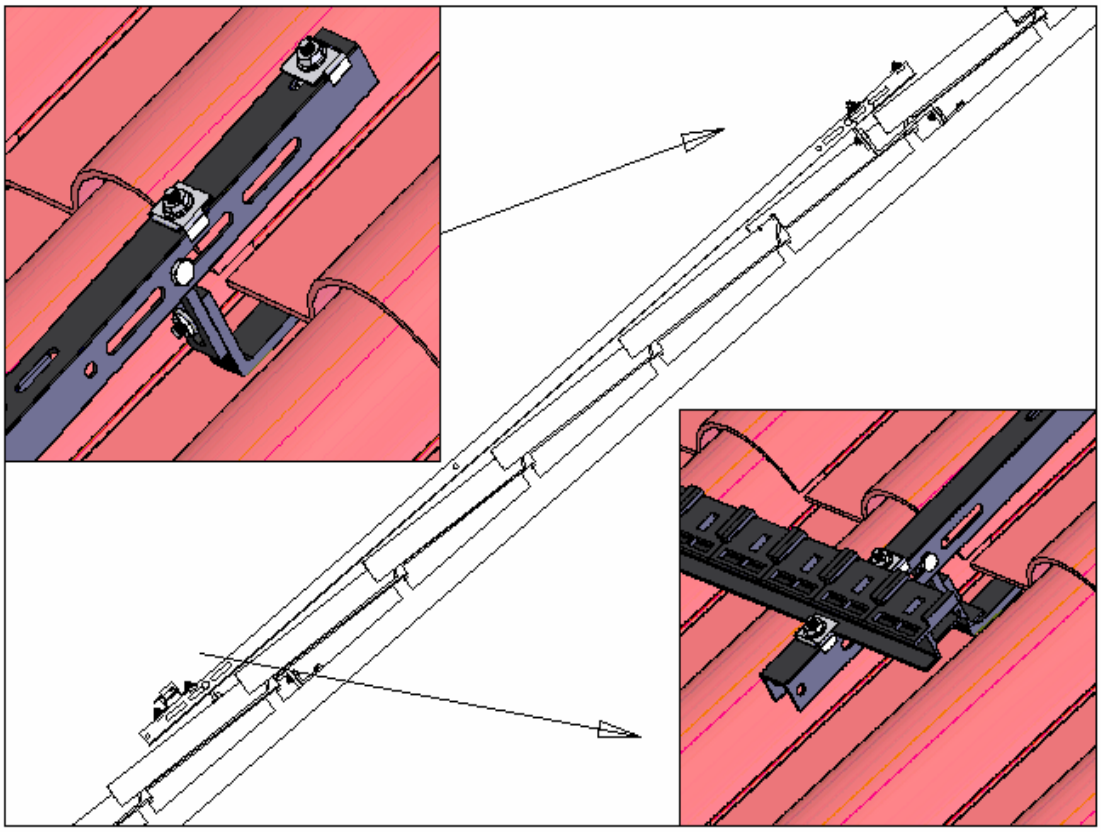
4.1.1.4. Installation tracks：

A－1：

Install front tracks, bottom tracks on the above fixed brackets as right top figure then put bottom track on front tracks end as right bottom figure.

Below fastener for tracks assembly

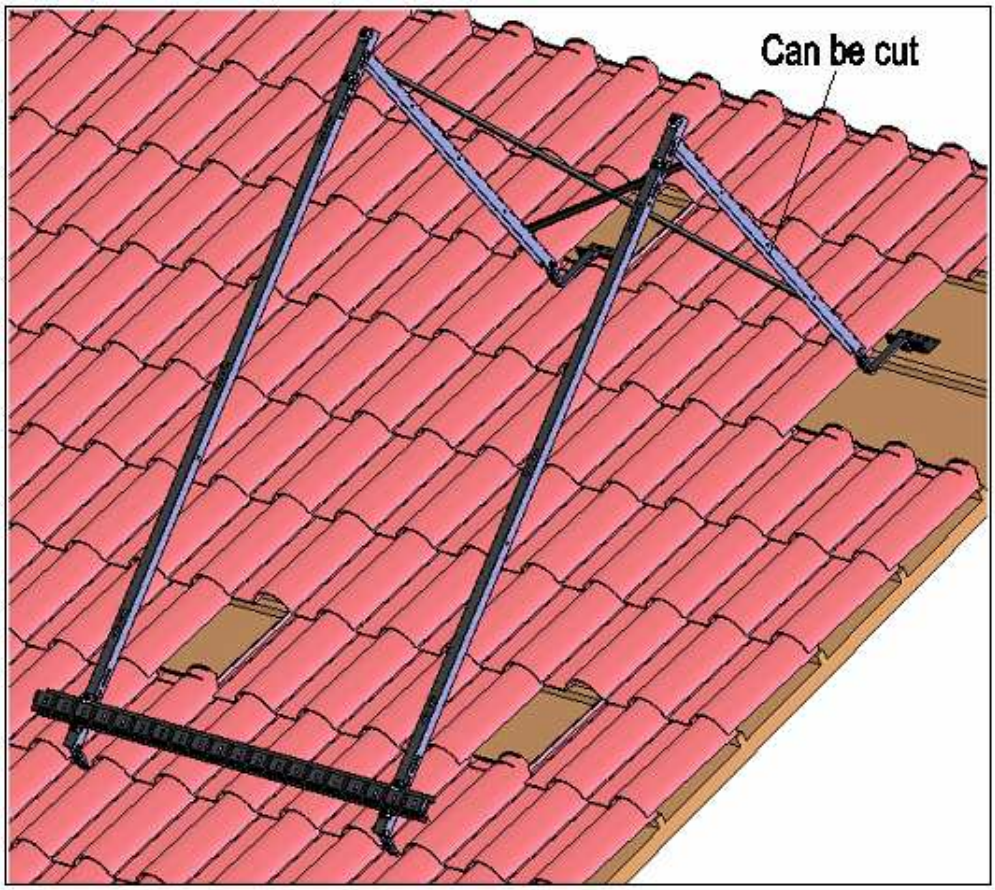




A－2：

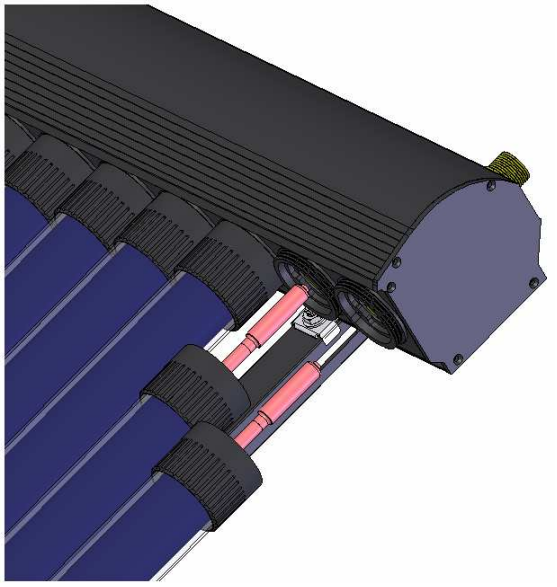
Install all of tracks with above fixed brackets as right figures.

Cutting back supports according to the installation request



4.1.1.5.Install manifold and glass tubes：

As right figure：



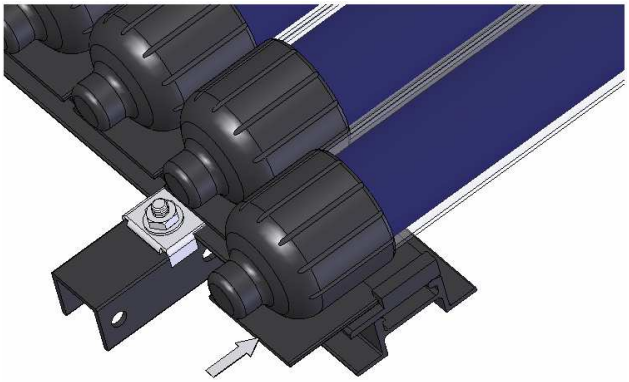
A. Put manifold on front tracks and fix up with fastener；

B. Insert heat pipe condenser to manifold；

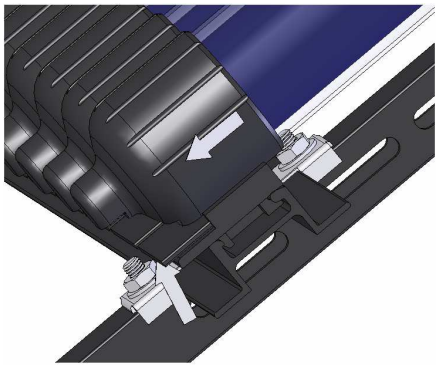
*put thermal conductive paste thinly and evenly on the heat-pipe condenser before insert to manifold.

C. Screw plastic tube holder with manifold box tightly；

D. Assembly glass tube bottom holder as below fig.



Note：Disassembly bottom holder as right figure. Follow the arrowhead way.

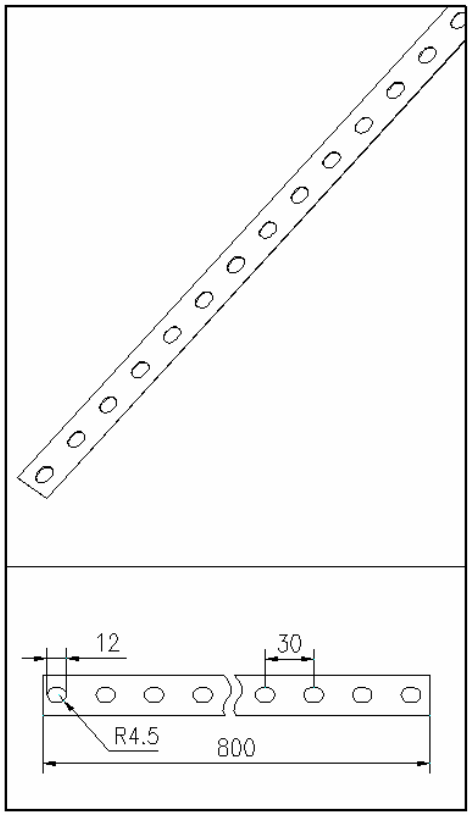


Remark：Installation all of parts carefully. Don’t damage the powder painting on the tracks. Don’t break the glass tubes.

4.1.2 Sloping roof installation B

4.1.2.1 Select perforated band as right figure

This band can be bended freely according to the roof structure and the tile shape.



4.1.2.2 Find distance between bands

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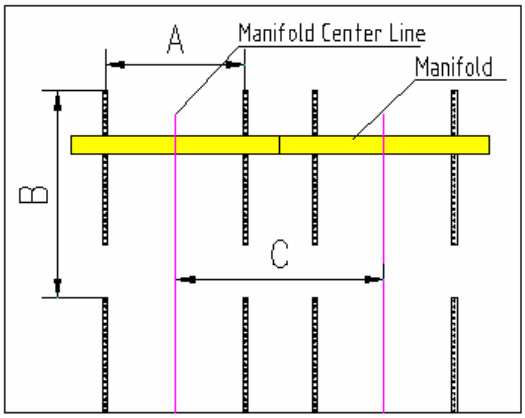

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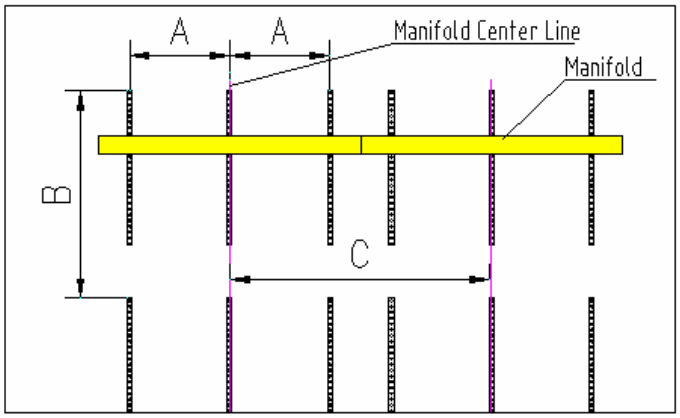
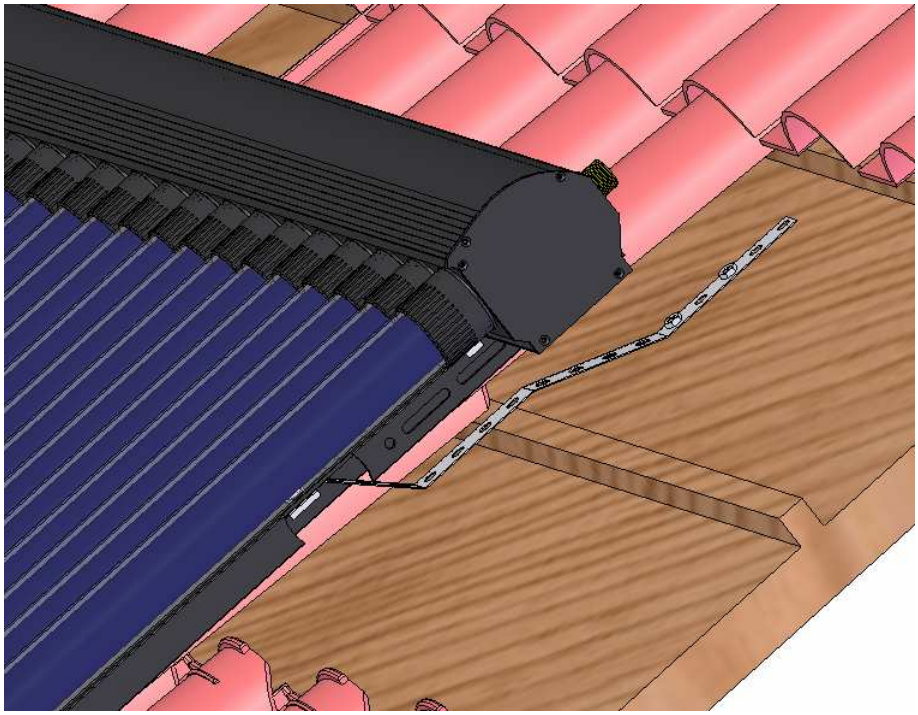


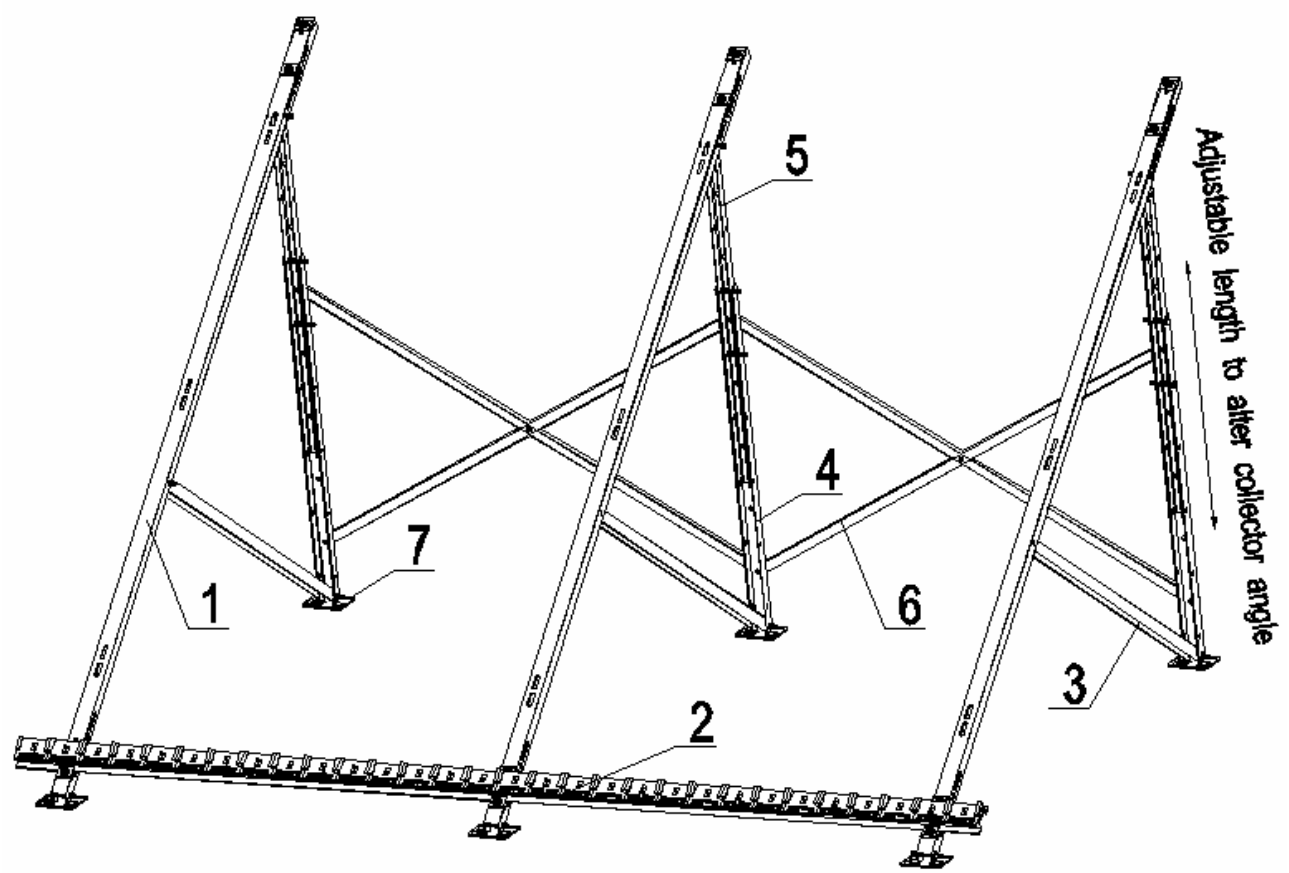
Dim.	Description	HCA-58/20	HCA-58/30
A	Horizontal bands spacing	1000～1300mm	800～1000mm
B	Vertical bands spacing	900～1300mm	1000～1400mm
C	Distance between centres	1410mm	2110mm

4.1.2.3. Fix the front track on the roof with bands as right figure.



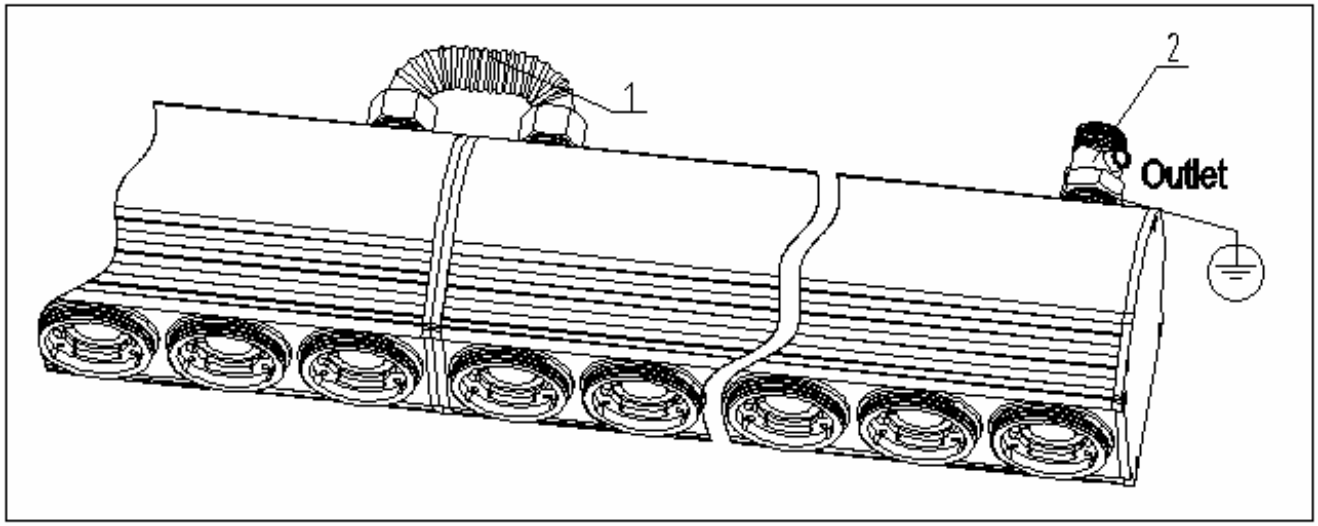
4.1.2.4 Other installation process reference to **"4.1.1 Sloping roof installation A"**

4.2 FLAT ROOF INSTALLATION



Adjustable angle range: 22^0-50^0

5. COLLECTOR CONNECTION AND GROUNDING



1. Flexible pipe connections with two unit nuts. Freely bend.
2. Temperature sensor faucet（put it on the outlet of collector）

Note：Please make inlet and outlet grounding for Lightening Conduction.